

## A NEW HAWAIIAN LIMNÆA.

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*Limnæa hawaiiensis* n. sp.

The shell is dextral, very narrowly rimate, obliquely ovate, thin and light brown; surface very closely, finely and distinctly striate longitudinally. The spire is extremely short and obtuse, there being scarcely three whorls in all, separated by a deeply impressed suture. The last whorl is convex below the suture, then slopes outward, and is full and sack-like at the periphery and base. The broad, ovate aperture is oblique and nearly as long as the shell. The columellar lip is reflexed, and indistinctly folded above.



Length 6.5, diam. 5.3, length of aperture 5.5 mm.

Hawaii, in small streams in the mountains on the Hilo side. Types No. S5.380, A. N. S. P., collected by R. C. McGregor in 1900.

The shell of this species approaches *Erinna newcombi* H. and A. Ad.,<sup>1</sup> described from Hanalei river, Kauai, in contour, but it is evidently more closely related to *Limnæa affinis* Souleyet.<sup>2</sup> That species was described from streams on the island of Oahu, and is said to be “*toujours sénestre*,” while every one of the 30 or 40 examples of *L. hawaiiensis* taken is dextral. Although Pease claims that some of the Hawaiian species are indifferently sinistral or dextral, it seems to me that the alleged constant sinistral coiling of the Oahu form, and the equally invariable dextral convolution of this form from Hawaii, indicate that the two islands are peopled by separate species of these short-spined *Limnæas*.

Pease includes *L. affinis* Soul. and *L. “sandwichensis”* Phil. (= *sandwichensis* Phil.) under *L. oahuensis* Soul. as synonyms.<sup>3</sup> It is evident that he had never seen Souleyet’s *L. affinis*, or even the figures of it, for it is as remote as possible from *oahuensis*. *L. sandwichensis* Phil. is a much more lengthened species than *L. hawaiiensis*.

None of the species described by Pease<sup>4</sup> and by Gould<sup>5</sup> are closely related to *L. affinis* and *L. hawaiiensis*.

<sup>1</sup> *Genera of Recent Mollusca*, II, p. 644.

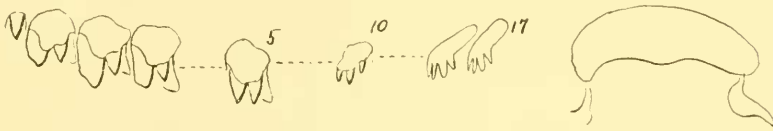
<sup>2</sup> *Voy. Bonite, Zool.*, II, p. 528, Pl. 29, figs. 42-44.

<sup>3</sup> *American Journal of Conchology*, VI, p. 5.

<sup>4</sup> Pease, *l. c.*, pp. 5, 6.

<sup>5</sup> *U. S. Exploring Expedition, Mollusca, Atlas*, figs. 140, 142.

The radula has about 15.S.1.S.15 teeth. The central tooth in each row is small and unicuspid. The laterals are bicuspid; the inner ones



have the inner cusp wide and obtuse or slightly emarginate, evidently composed of entocone + mesocone. The two cusps become subequal on the outer lateral teeth. The inner marginal teeth have three cusps, the outer ones four, by splitting of the entocone.

The jaw is arcuate, with small lateral appendages as usual in *Limnaea*. It is smooth.

The teeth of this snail differ from those of Holarctic species of *Limnaea* in the structure of the laterals, but the radula is not that of the *Planorbinae*. The dentition is known in so few Linnæid species outside of Europe and the United States that no useful comparisons of this peculiar Hawaiian type can be made. The animals as contracted in formalin resemble *Limnaea* externally, having short, wide tentacles and a short foot.